

The Analysis of Influence and Reasons of Coal-Electricity Price Conflict

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Abstract

The severe conflict between electricity price and coal market price in China has existed for long time. As coal-electricity price conflict becomes fiercer, this issue arouses wide concern in the operation of national economy. This paper analyses the influence triggered by the coal-electricity price conflict on national economy and civilian life. And the deep-seated reasons for the conflict are investigated based on those impacts.

Keywords

Coal-Electricity Price Conflict; Supply and Demand of Coal and Electricity; Mechanism of Coal and Electricity Price Linkage

Introduction

Since the reformation of coal-electricity price in 1993, two completely different pricing mechanisms –market pricing and planned pricing –have coexisted in coal market of China. Though the government has unloosen the price of coal-electricity in 2000, and the coal-electricity price in China has basically achieved the market price, the initiative of electricity price is still in the hand of government firmly. In the case of coal-electricity and “two-ties” of management, coal enterprises are reluctant to sell coal to power enterprises, and the same for power enterprises in market price. Consequently, the “weird-circle” is formed that both buyer and seller are reluctant to perform their roles which is coal-electricity price conflict between “marketed coal” and “planned power” [5].

Even though the proportion of power generation by means of new energy increases gradually, the proportion of coal-fired power is as high as 78% at the present situation in China. Lack of coal resources and marketed price make thermal coal more expensive. For power industry, thermal coal's supply is becoming a factor restricting the electricity production. However, the feed-in tariff is still set by NDRC (National Development and Reform Committee) and price departments of local government, resulting in conflict between “marketed coal” and “planned power”

intensified.

Reasons of Coal-Electricity Price Conflict

Many reasons contribute to the price conflict, including unreasonable price system as well as the imbalance between supply and demand of coal-electricity, unavailable competitive structure of coal market, irregular price standard of price management and imperfect laws and regulations system, etc.

Supply and Demand of Coal-electricity and Price System

As Coal and Electricity industry are the upstream and the downstream industry related to the same industry chain respectively, so they have a highly close relationship. With the development of China's economy which lifts the ever-increasing power consumption and demand of the coal-electricity in the recent years, the tension triggered by the imbalance between supply and demand of coal will exist for a long time.

Currently, coal price system has two defections. On the one hand, coal's absolute price is on the slow side and the coal-electricity price system does not match the principle of compensation for the cost. The price excludes some cost, such as cost of the acquisition of the resources and exploration, exit cost caused by the changes of factory and personnel when the coal enterprise has to close due to the exhaustion of resource. Moreover, there is a big gap between the real case and the standard of the depreciation and maintenance fee of fixed assets. These factors lead to a wide price gap between unit price of thermal-coal and selling price of commercial coal. On the other hand, coal price ratio is unreasonable. It is easy to reveal the price interrelationships among different kinds of energy sources when different fuel prices are translated into unit calorific value price. It is assumed that unit price of calorific value of power is 100, and in the dominant energy markets of the world, the price proportion of coal, kerosene, natgas, oil and power in

global energy markets is 51:67:77:85:100 in 2007. However, the proportion is 12:15:37:49:100 in China and the ratio of coal and electricity is much lower. Compared with other energy sources, the price of thermal-coal is obviously low ^[3].

Market Competition

Because of the reformation of “separation of factory and network” in power system, it helps to shape the market pattern of “multi-power enterprises to multi-coal enterprises and the convention monopoly status among coal enterprises. From the view of power industry, though the power transmission and distribution have become the two large grid companies—State Grid Cooperation and Southern Power Grid, the power industry is still the oligopoly due to the undivided fact. Without the competition in the distribution of power, grid companies are definitely a monopoly entity, which reasonably stops supply and demand chain and becomes the only buyer and seller. Similarly, there is a seller’s monopoly in the selling price section. The electricity customers have no choice but purchase power from one monophonic grid company who neither compensates customers for the power rationing, nor take the economic responsibility of failure in the offer of the power ^[6].

For the failure of effective competitive market structure, the game of marketed coal and planned power around thermal coal price is not suspended but fiercer. To win the game, power enterprises purchase thermal coal together and take many measures to control the coal’s price, while coal enterprises try to sell coal jointly with the strategy of large group and decrease coal quality to fight against the price game.

Government Price Control

After the marketization of coal industry, to reduce the cost of the power enterprises, the power-coal contract price set by government is lower than market price. According to the price theory, however, the contract price under control of thermal coal price is the ceiling price.

Because the mechanism of coal and electricity price was not started timely and poorly enforced, the NDRC issued < the opinions and notice on establishment of a linkage mechanism of coal and electricity price > in 2004. After the following two years, coal and electricity price linkage has been carried out twice according to the situation of coal market in China. But it failed after government raised power to grid price and sales price.

Thermal coal prices have continually risen since 2008, so the NDRC raised grid price many times to keep step with the rising coal price. However, the increase in power price is far irreparable climbing fuel costs, which contributes to a series of social problems including the spiral increase in price of coal and power and government failure.

In addition, due to poor government supervision and divergent functions, it failed to consolidate economical supervision and social supervision in different departments. Meanwhile, the concept and professional level of supervision team cannot meet the needs of marketization reform.

Laws and Regulations and Rules

1) Dysfunctional Laws and Regulations in Power Market

In a developed market economy, before the power system reform, government should modify and perfect the related laws about power to clear the direction, principle and path of reformation. However, in China, the electric power law was established in 1996 when power market has been under the model of integration’s monopoly. With the implementation of electricity market for 6 years later, there is still no change in electric power law, which leads to the absence of legal basis for the marketization of power and effective reform.

2) Antiestablishment of a Clear Modern Enterprises System of Property Rights in Coal-power Enterprise

The reform of power marketization involves in not only the restructured organization, but also the property system reform. In the power market reform, e.g. Britain, the United States and other market economy countries, they all have selected privatization to set up a risk control mechanism and make enterprises become truly economic entities responsible for their own profits and losses and the risk of the market. Coal and power enterprises would be appropriate for a long-term contract to share profits and risks when the supply and demand between them are regular. While the barrier is that both sides cannot do this because of the governance structure in enterprises. In recent years, although China has a good job in restructuring power enterprises, most of them are still state-owned enterprises. And it is hard to form the incentive and binding mechanism effectively for the single property right and structure. In 2008, coal

price soared to a great extent due to the failure that both coal and power enterprises can't abide by the contract and partly due to the ineffective reformation of system of property rights in coal enterprise.

Influence of Coal-Electricity Price Conflict

As a robust drive for national economy, coal has a close relation to other industrial sectors. Changes in prices of coal have a great influence on national economy. Not only price level of related industry but also prices and people's spending are included.

Influence on Coal Producer

The rise of thermal coal price directly accelerates the income growth of coal producers.

Increasing coal price leads to an expansion investment in coal industry. Firstly, coal enterprises would invest more on exploration and mining of coal to raise the coal output and keep profit growth. Secondly, the addition of income stimulates blind investment and excessive capacity in coal industry.

The cost of mine and coal mining go up with price of thermal coal [4]. This is mainly reflected in growth of labor charges, materials, transport price and cost caused by traditional production concept and rough management.

Influence on Electricity Allocation and Sales Enterprises

Since 2004, the growth of power price is lagged behind the coal price. Gross margin in electricity industry, especially in thermal power enterprises, has a significant slowdown. And there is a great deficit in many power plants whose capital chain has a risk of collapse at any time.

Some coal enterprises have reduced coal quality by means of adulteration of water and the crush of coal gangue to coal in order to widen price gap between the contract electric coal and the market. Not only does it increase coal consumption and the risk of tube explosion in power plants, but also it impacts the supply of electricity and the stable operation of grid, which adds the cost of management accordingly.

Coal-electricity price conflict also has effect on the security of coal storage system. Generally, electricity factory stores about 30 day's consumption of thermal coal in power plants to make sure output when coal cannot be transported timely. The storage volume of

coal in power plants is going down because of the growth of coal price. In some plants, the storage is reduced to just for 10 days and some even only for 5 days, which triggers a great production risk in winter.

Influence on Commercial Companies

1) Effect on Performance of Commercial Companies

When power price rises, commercial companies might have two possible reactions to the monopoly of electricity supply and irreplaceable power. One is to keep the product prices stable to resist the effects of price rise, which would lessen the profit at the same time. The second is to reduce pressure caused by the growth of power price by means of the growth of product price, which leads to a direct effect on the sale of products and the competitive ability.

2) Effect on High Energy-consuming Industries

The growth of power price means the increment of costs, especially in the industry that has high demand of electricity, such as basic chemistry, steel rolling industry, construction industry, non-ferrous metal metallurgy and metal products industry, etc. while to other high energy-consuming industries, there is a greater cost pressure as well. The price of products cannot rise sharply as a result of changes in supply-demand relations; meanwhile, it restrains excessive expansion of high power consumption industries.

3) Effect on Enterprise Technology Innovation

For most of the industrial enterprises, the increase in power price pushes up costs, in contrast to the fact that it is forbidden for enterprises to turn all costs to consumers in competitive market, in which case, to survive in the market, industrial enterprises can only innovate technology and improve the technology needed in the product [1].

Influence on Macro Economy

For power industry, power price is a part of the price chain of national economy. Thus, the increase of price will exert a great influence on downstream industries. Empirical data indicates that the increase of power price influences the second industry most, and then the third and first industries least [2]. There is a kind of pushing affection to CPI when all products prices soar. However, on the other hand, the pressure of currency inflation will be enlarged.

The blind investment caused by the high price of coal leads to excessive capacity in coal industry. On the contrary, investment in new power generation capacity is inadequate. Under these conditions, primary energy is not coordinated with the secondary energy, which reduces the development efficiency of energy industry.

While from another perspective, the increase of power prices may motivate the development of new and cheaper alternative energy sources. New energy plates responds to higher electricity tariffs under the aid of accelerated development, including wind, solar, nuclear, and geothermal and hydrogen energy.

Influence on Residents' Life

Thermal power is the main energy driving national economic development and improving people's living. Coal-electricity price conflict has a certain effect on citizens inevitably. As electricity utilized is a rigid demand, the potential hazard derived from higher power prices due to higher electricity demand is limited. Although the electricity consumption by residents only occupies about 12% of the total utilized electricity, the increment of price must make a higher spending for living.

Conclusions

Coal-electricity price conflict has a significant effect on national economic development, industrial structure optimization and citizens' life. And the reasons of this conflict are various and complicate. Therefore, the

government needs to adjust and harmonize coal-electricity prices systematically based on the overall situation.

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